

## Long Brothers Cleaners Site Investigation Plan Notes

### 1. Six Soil Borings

- a. Eight soil borings were proposed in the approved workplan.
  - Please explain why 2 samples were excluded from the field work.
- b. Solvent odors were detected in SB3, SB4, SB5, and SB6
  - SB4 had the highest PID readings at 8-10 feet (~9,999+)
  - SB3 read 2638 between 8-10 feet
  - SB5 read 7754 between 8-10 feet
  - locations of the high solvent odors indicate a release may have occurred at the southeast corner of the building.
- b. Analysis
  - 29 VOC constituents including benzene, cis 1, 2, dichloroethene, PCE, and TCE were detected above lab reporting limits.
    1. Each detection was below applicable standards except for PCE
  - PCE detected at 2,000mg/kg at SB3, 2180mg/kg at SB4, and 3720mg/kg at SB5.
    1. Levels exceed both Industrial and Residential RSL of 110mg/kg and 22mg/kg

### 2. Groundwater

- a. GW was only encountered at SB1 between 6-7 feet and is not considered representative of the shallow aquifer located below bedrock.
- b. Acetone, benzene, cis 1,2 dichloroethene, TCE and PCE were detected above the lab reporting limit.
  - PCE and TCE concentrations exceeded the EPA MCL of 5ug/L.
    1. 191 ug/L for PCE and 8.03ug/L of TCE

### 3. Soil Vapor

- a. Four samples taken from around the property and one taken from inside near the wall shared with the day care center.
  - cis 1,2 dichloroethene detected above the EPA soil gas risk level (350ug/m3) in VP2 (2,000ug/m3), VP3 (7400ug/m3), and VP4 (2700ug/m3).
  - PCE was detected above the EPA residential risk level of 8.1ug/m3 in each sample.
    1. VP1(45ug/m3), VP2 (4,900ug/m3), VP3 (20,000ug/m3), VP4(22,000ug/m3) and VP5 380(ug/m3)
  - TCE was detected above the EPA residential risk level of .22ug/m3 in all but VP1.
    1. VP2(1550ug/m3), VP2 (3400ug/m3), 7400ug/m3 in VP4, and 83ug/m3 in VP5

- Vinyl Chloride was detected in all samples except VP1 and VP4 above the EPA residential risk level of 2.8ug/m3

1. VP2 70ug/m3, 320ug/m3 in VP3, 83ug/m3 in VP5

#### 4. Indoor Air

- a. Two indoor air samples collected, one at the front and one at the rear in the area of the dry cleaning unit.
- b. Benzene was detected at the rear at a concentration of 4.4 ug/m3, above the EPA residential and commercial limits of .31ug/m3 and 3.1ug/m3.
- c. Ethylbenzene was detected at the rear at a concentration of 7.9ug/m3, above the EPA residential and commercial limits of 2.2ug/m3 and 22ug/m3.
- d. **PCE was detected in both indoor air samples at 170ug/m3 in the front and 4400ug/m3 at the rear**, above the EPA residential and commercial risk levels of **.81 and 8.1ug/m3**

-The Narrative of this paragraph states "There are no published RBSLs for PCE" and the intent may have been to say "There are no DDOE published RBSLs for PCE".

- e. **TCE was detected in the rear sample at 1.3ug/m3, above the EPA commercial and residential risk levels of .22ug/m3 and .022ug/m3.**
- f. Chemicals were inventoried inside the facility to determine the source of any VOCs that could represent potential background contamination sources in the indoor samples.
  - Indoor air sample results are not indicative of a vapor encroachment issue if the chemicals stored and in use at the time of sampling have skewed the results.
- g. Indoor air samples must be taken inside of the adjacent daycare center to determine if a vapor encroachment condition exists in that structure.

#### 5. Ambient Air

- a. One sample taken outside to the west of the building.
- b. Benzene was the only VOC detected above the EPA residential air risk screening level of .31ug/m3 at .72ug/m3.
  - this did not exceed the industrial screening level or the DDOE resident child levels.

#### Long Brothers Cleaners Site Investigation Plan Comments

The goal of conducting a site inspection at Long Brothers Cleaners was to evaluate if the active and historic dry cleaning activities conducted at the Subject Property have impacted the indoor air of Long Brothers and whether there is potential for indoor air contamination to exist in the adjacent child care center. The overall report achieves this goal by reasonably attributing a release of hazardous substances to the subsurface soil was caused by past dry cleaning operations and associating the release with detected soil gas vapors and indoor air contaminants. The structure of the report however fails to meet the minimum requirements expected to be included in a Superfund Site Assessment Site Inspection

report. There is also a reasonable threat of contaminant vapors that may be intruding into the neighboring child care center, however, indoor air and soil-gas samples must be taken from inside and around this building structure to confirm this. The location of the highest soil vapor levels and soil boring contaminant levels also puts the neighboring multi-family residential buildings to the south of Long Brother's at risk to exposure and should be considered in further indoor air evaluations. Evidence that groundwater beneath these properties has been impacted has not been proven and will need to be confirmed in order to complete the groundwater exposure pathway. The levels of soil gas and indoor air contamination of PCE vapors are extraordinarily high and it may be most appropriate to refer this site to the EPA Removal program to address immediate threats to human health and the environment unless DDOE has an alternative contingency plan to mitigate threats at this site. Acquiring the additional information needed to score the site under the Hazard Ranking System for determining eligibility for the National Priorities List should be secondary to determining the need for immediate removal action, given the high levels of vapor exposure detected.

Other overall observations regarding the Site inspection report are the following:

1. The report lacks any discussion on the nature of waste handling at the site; discussion on the exposure pathways; discussion of the human populations and environmental targets. Therefore the report does not meet all the requirements of a Superfund Site Assessment SI report.
2. As acknowledged by the report, the groundwater pathway is incomplete because true shallow aquifer samples could not be obtained due to bedrock refusal of the geoprobe.
3. It is likely that soil contamination levels would be 3x that of background, had background samples been taken or assuming background can be taken. Concentrations that are 3x background would constitute an observed release to the soil for purposes of scoring the site under the Hazard Ranking System.
4. Further description of the area where soil samples were taken is needed to explain whether the area is paved with an impervious surface or if the surface soil is exposed where it could come in direct contact with individuals.
5. Soil samples were taken from the 6-8 foot and 8-10 foot interval because that was where the highest reading occurred on the PID. This was the procedure described in the approved Site Workplan. These depths are well below the surface to two foot interval needed to establish a release to soil under the HRS. Did the PID detect any levels of surface contamination or were there any visual/olfactory observations that would indicate the surface interval is a threat to human exposure? Samples taken from the surface to two foot interval will be needed to accurately score the site under the HRS.
6. Eight soil borings were proposed in the approved Site Workplan. Please explain why two samples were omitted from field activity.
7. Indoor Air Sampling – Analytical Results – Paragraphs 5 & 6 state that "There are no published RBSLs for PCE (and TCE)." Is this intent to say that "There are no published DDOE RBSLs for PCE (and TCE)" as it is written in the Goody's Cleaners Site Inspection report?